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EXAMINER

DAGOSTA, STEPHEN M

ART UNIT

PAPER NUMBER

2683

DATE MAILED: 10/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/684,096

Applicant(s)

UANG ET AL.

Examiner

Stephen M. D'Agosta

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Response to Arguments*

Applicant's arguments filed 10-16-2005 have been fully considered but they are not persuasive.

1. The applicant's claim amendments overcome the primary examiner's objections and USC 112 rejections. Thank you.

2. The applicant argues that prior art does not teach a link from the PBX to the PSTN. First and foremost, the examiner notes that it is well known for PBX's to connect directly to the PSTN (if the applicant disagrees, please rebut this with factual proof). Secondly, Cyr specifically states that "...The PBX 140 is also coupled to the PSTN 101 whereby communications may be routed between the in-building communications system 110 and the public communications system..." (see C3, L19-42). The applicant states that Col 3, L3-7 does not appear to refute Cyr's teaching. Lastly, the claim language appears to be more of a "design consideration" as opposed to a novel concept since a telecommunications engineer can connect the hardware in a myriad of ways, most of which depend upon cost and backup routes. Hence the examiner does not read this feature as being novel – also note that "pertinent prior art" provided but not relied upon show a PBX connecting to the PSTN which is well known (see Chow, Jackson, DeSantis and Haartsen).

3. The applicant argues that Cyr does not teach a business system located at a plant to avoid signal degradation. The examiner disagrees and interprets Cyr's system as being used by in-plant personnel for business purposes. The ability to use either mobile or wired phones can assist with signal degradation.

4. The applicant argues that Cyr does not teach two independent communication links. The examiner disagrees since this, again, is a design consideration and one skilled can/will provide for primary and redundant communications links. Further, Cyr teaches links to the in-plant BTS and to the PBX (see C3, L19-42, as discussed above).

5. Since Cyr discloses connecting the in-plant BTS to the PBX as well as connecting the PBX to the PSTN, communications between two people located at the plant can occur via the PSTN. It appears that while this communication would traverse the link between the in-plant BTS and PBX, should this link fail, it would be supported by the PSTN. This again is a design consideration, so the PBX and in-plant BTS would rely on switching/routing software to make the optimal connection on a case-by-case basis.

6. With regard to Speasl, the applicant states that this art is incorrectly applied. The examiner disagrees and has interpreted the claims in the broadest possible manner. If the claims need to be rewritten to more clearly define that which is being claimed, then that burden falls on the applicant. The examiner copied exactly the claim language and applied pertinent prior art. Speasl addresses "whereby a multipath can be eliminated, and reliable communication can be attained in circumstances of shielded areas at the plant". Cyr did not address shielded areas in plants.

7. The applicant completely applies the manner in which Speasl is applied and hence arrives at a conclusion that there is no motivation to combine. Speasl's teachings, as applied to this application, deal with transmitting "...signals into the shielded environment to be received by a receiver device located therein..." (see claim 1 rejection). Hence one skilled would use a similar design to provide in-plant communications to a shielded area. Wilson was applied to show that several different embodiments are known with regard to providing communications to/from shielded areas/compartments.

8. The motivation to combine the analogous art cited is clearly stated by the examiner. Hence he believes the rejection to be proper.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-4, 6-11, 13-17 and 19-20** rejected under 35 U.S.C. 103(a) as being unpatentable over Cyr US 6,223,055 and further in view of Speasl et al. US 5,815,114 and Wilson et al. US 6,317,089.

As per **claims 1,9 and 16**, Cyr teaches a business telecommunication system capable of connecting wireless mobile stations and wired stations located at a plant/building to avoid signal communication degradation with relatively higher signal relecting areas within the plant (abstract and C1, L10-50), the system comprising:

a base station to which said wireless mobile stations are connected, said base station being installed at said plant/building (figure 1, shows a wireless base station in the building, #130)),

a private branch exchange to which said wired stations are connected, said private branch exchange being installed at said plant/building (figure 1, #140 shows a PBX connecting to wired phones)

at least two dedicated lines, at least one line of said at least two dedicated lines connecting said base station with a public switched telephone network, another at least one line of said at least two dedicated lines connecting said public switched telephone network with said private branch exchange (figure 1 shows BTS #130 with link to public cellular network. Also see C3, L19-42:

"In addition to the wireless base station 130, the in-building communications system 110 includes a private branch exchange ("PBX") 140 that is couplable to the wireless base station 130, and a plurality of wired extensions, generally designated 150, coupled to the PBX 140. The PBX 140 is also coupled to the PSTN 101 whereby communications may be routed between the in-building communications system 110 and the public

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communications system 100; e.g., voice calls can be routed between a wireless terminal 120 and a wired extension 150 via the public wireless network 102, PSTN 101 and PBX 140"),

a plurality of antennas associated with said base station to connect said wireless mobile stations to said base station (figure 1 shows a BTS #130 which inherently comprises multiple antennas, also see C6, L45-59), and

**but is silent on** whereby a wireless communication signal multipath can be eliminated, and reliable communication can be attained in circumstances communications with relatively higher shielded signal reflecting areas at the plant.

The primary examiner notes that cellular communications operate better in outdoor environments versus indoor environments due to the fact that buildings/structures attenuate the mobile's ability to transmit/receive. Hence a plant or office building can be interpreted as a "shielded" environment (as compared to outdoors) and one skilled would place Base Stations indoors to provide better communications. Taking this concept one step further, the primary examiner notes that a building with an indoor shielded room/enclosure would parallel the indoor/outdoor comparison just discussed, ie. indoor is to outdoor as building is to shielded room. Simply put, the phone will operate better outdoors than indoors, and if indoors, the phone will operate better in the building rather than in the shielded room within said building. Hence one skilled would place a Base Station inside a shielded room to provide optimal communications in that shielded environment. Lastly, Cyr states that public coverage is expanding to many different places (C1, L34-44), all of which are buildings and can shield RF transmissions.

To support the primary examiner's assertion above, he puts forth **SpeasI** who teaches RF communications with a device in a building and/or shielded room:

This invention relates in general to positioning or location systems and, in particular, to such a system as utilized to locate objects within an interior space or shielded environment. More specifically, but without restriction to the particular embodiments hereinafter described in accordance with the current best mode of practice, this invention relates to a

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location positioning system for use in a shielded environment that utilizes GPS-type signals. (**figures 2-3 and C1, L5-13**).

According to one aspect of this invention, the GPS-type signals are transmitted into the shielded environment to be received by a receiver device located therein. The receiver device is capable of transmitting a location signal. In one particular implementation of this invention, there is further provided a computer and a location receiver associated therewith. The location receiver is positioned within the shielded environment to receive the location signal from the receiver device so that a precise position of the location receiver may be determined by the computer by processing the location signal. According to a specific use of this invention, the location device includes a cellular phone or alternatively a badge capable of being attached to a person moving within the shielded environment. (**C3, L33 to C4, L45 teach various embodiments**).

Further to this point, **Wilson** teaches means for connecting a mobile device inside a "shielded environment" to an antenna outside said shielded environment via a wired interface (Abstract, figures 1-2 and C2, L36-62 teaches a user in a shielded environment such as a car and/or stationary building with metal in their walls, which reads on the claim).

**With further regard to claim 9**, Cyr teaches (C2, L9-14) connections between wired/wireless devices by only dialing the extension number of the other phone, which reads on the claim). While Cyr is **silent** on the shielded area being a clean room at a semiconductor plant, Speasl and Wilson's teachings disclose means for providing communications in any shielded area (which reads on a clean room).

**With further regard to claim 16**, Cyr teaches low power antennas (C6, L40 to C7, L12).

It would have been obvious to one skilled in the art at the time of the invention to modify Cyr, such that multipath can be eliminated, and reliable communication can be attained in circumstances of shielded areas at the plant, to provide means for operating a wireless device if/when a user roams into a shielded environment.

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As per **claim 2**, Cyr teaches 2. The system as claimed in claim 1, further comprising software means for creating a unique full network number for any of said wireless mobile and wired stations, whereby a connection between said wireless mobile stations and between one of said wireless mobile station and one of said wired stations, no matter whether said wireless mobile stations are at the plant at the moment of establishing the connection, can be set up by using their abbreviated intra-plant numbers (C2, L9-14 teaches connections between wired/wireless devices by only dialing the extension number of the other phone, which reads on the claim).

As per **claims 3, 10 and 17**, Cyr teaches claim 2/9/16, wherein said software means are incorporated in said base station and said private branch exchange (C2, L9-14 discloses the PBX comprises dialing software to route calls AND see C1, L52-65 which refers to both the PBX and BTS operating together to support "call routing operations" and requires software at both PBX and BTS - which reads on the claim).

As per **claims 4 and 11**, Cyr teaches claim 1/9, wherein said antennas are low power antennas (C6, L40 to C7, L12 teaches low power antenna systems).

As per **claims 6 and 13**, Cyr teaches claim 1/9 **but is silent on** wherein said base station is a Global System Mobile base station.

Cyr does teach support to PCS (C1, L12-22), Digital Amps and CDMA (C7, L32-45). Hence the primary examiner interprets Cyr as supporting GSM too since he does allow for modifications within the spirit and scope of his invention (C9, L21-26).

It would have been obvious to one skilled in the art at the time of the invention to modify Cyr, such that the BTS is GSM, to provide support to all the industry standard cellular/wireless communications standards available today.

As per **claims 7, 14 and 19**, Cyr teaches claim 6/13/16 **but is silent on** wherein said base station employs FDMA and TDMA with dynamically controlled transmitting power ~~is of Ericsson RBS 2205 type~~.



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The primary examiner takes Official Notice that it is well known in the art that cellular systems use FDMA/TDMA protocols with dynamically controlled transmitting power ~~that Ericsson builds/sells cellular communications systems/hardware. Hence Cyr's teachings and design would operate with Ericsson hardware.~~

It would have been obvious to one skilled in the art at the time of the invention to modify Cyr, such that it employs FDMA and TDMA with dynamically controlled transmitting power, to provide means for supporting well known cellular protocols/operations ~~said base station is of Ericsson RBS 2205 type, to provide support for industry standard vendor hardware that is prevalent in the network today.~~

As per **claims 8, 15 and 20**, Cyr teaches claim 1/9/16, **but is silent on** wherein said private branch exchange comprises greater than about 240 communications ports ~~is of a Siemens Hicom 300 family.~~

The primary examiner takes Official Notice that PBX's come in various sizes and have can be configured with different numbers of ports. The applicant states that:

"...Hicom 300 versions such as Hicom 3301-1 type, its capacity being 240-1392 ports, or Hicom 35011 with 384-5760 ports can be selected. One of the characteristic features of Siemens Hicom 30011 is its small overall dimensions, the PBX being 3-4 times less than other comparable switches, it also has surprisingly low power consumption, can work in any climatic zone, and does not require forced ventilation..." (Spec. page 12, top).

~~it is well known in the art that Siemens builds/sells telecommunication systems/hardware. Hence Cyr's teachings and design would operate with Siemens hardware.~~

It would have been obvious to one skilled in the art at the time of the invention to modify Cyr, such that said private branch exchange has greater than 240 communications ports, to provide support to a small/mid-sized company. ~~is of a Siemens Hicom 300 family, to provide support for industry standard vendor hardware that is prevalent in the network today.~~

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**Claims 5, 12 and 18** rejected under 35 U.S.C. 103(a) as being unpatentable over Cyr/Speasl/Wilson, and further in view of Kay et al. US 5,633,873.

As per **claims 5, 12 and 18**, Cyr teaches claim 1/9/16 **but is silent on** wherein said at least two dedicated lines are of E-1 type.

The primary examiner notes that communication links between buildings/offices and the PSTN are typically implemented using T1 and/or T1/E1 links. These provide high-bandwidth links while keeping costs low (eg. when compared to leasing twenty four separate DS-0 links).

Kay teaches "Referring to FIG. 10 an alternate interface configuration of FIGS. 2 and 3 is the PBX connection, which affects the subscriber interface portion 36 of the embodiments of FIGS. 2 and 3 in a similar manner. Referring to configurations 90 and 92 PBX 94 performs local call routing and handles any special services required by the local subscribers. In the configuration 90, the PBX provides four wire interface circuits to the MSU. In the configuration 94, a T1 or E1 interface is provided depending on the type of PBX used. The MSU serving the four wire interface is identical to FIGS. 2 and 3 except for the four wire rather than two wire interface. This is true for both voice and data applications. As previously mentioned, the MSU can provide either dedicated data channels in which case the PBX must route data applications to those channels, or combined voice/data interfaces in which case the routing is not needed. For the T1/E1 PBX interface 92, the PBX will interface to the MSU's internal PCM bus via an electrical level and format conversion circuit." (C9, L40-60)

It would have been obvious to one skilled in the art at the time of the invention to modify Cyr, such that said at least two dedicated lines are of E-1 type, to provide means

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for connecting between the private and public communications systems via high-speed links.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. D'Agosta whose telephone number is 571-272-7862. The examiner can normally be reached on M-F, 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Trost can be reached on 571-272-7872. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Stephen D'Agosta  
Primary Examiner

